

Subject: Science

Grade: Eighth

Standard: #3 The Physical Setting

**Key Concept:** Large numbers of chunks of rock orbit the sun. Others are found on moons and planets. Sometimes these rocks plunge through earth's atmosphere or are brought back to earth through space explorations.

**Generalization:** We can learn about space rocks by studying their attributes.

**Background:**

Students have knowledge of the planets and their moons. This lesson follows a discussion of meteors, meteorites, and comets. The activities come from Mission Mathematics: Linking Aerospace and the NCTM Standards, Grades 5-8, ISBN 0-87353-435-2. Each activity includes a materials list and directions for completing the activity.

Students are placed in groups of four based on their ability to calculate surface area (Tier I) and volume (Tier II) of irregular shapes and their ability to reason abstractly (Tier III). Prior to the activity, the whole group participates in a discussion of the attributes of the rock set and a set of attribute blocks. All students use the same rocks for their activities.

This lesson is tiered in *process* according to *readiness*.

**Tier I: *Basic***

This group will complete Lesson One, "How Big Are the Rocks," Part B - Surface Area.

**Tier II: *Grade Level***

This group will complete Lesson One, "How Big Are the Rocks," Part B - Volume

**Tier III: *Advanced***

This group will complete Lesson One, “How Big Are the Rocks,” Part C. Students in this group need to have a strong underpinning in algebraic thinking.

**Assessment:**

Teacher observation and student interviews during the investigation will serve as formative assessments. Laboratory reports should be assessed with a rubric, including ability to carry out the investigation and accuracy of measurements. Once all groups are finished, whole class discussion can focus on reports from each group and a compilation of class data on a master chart.